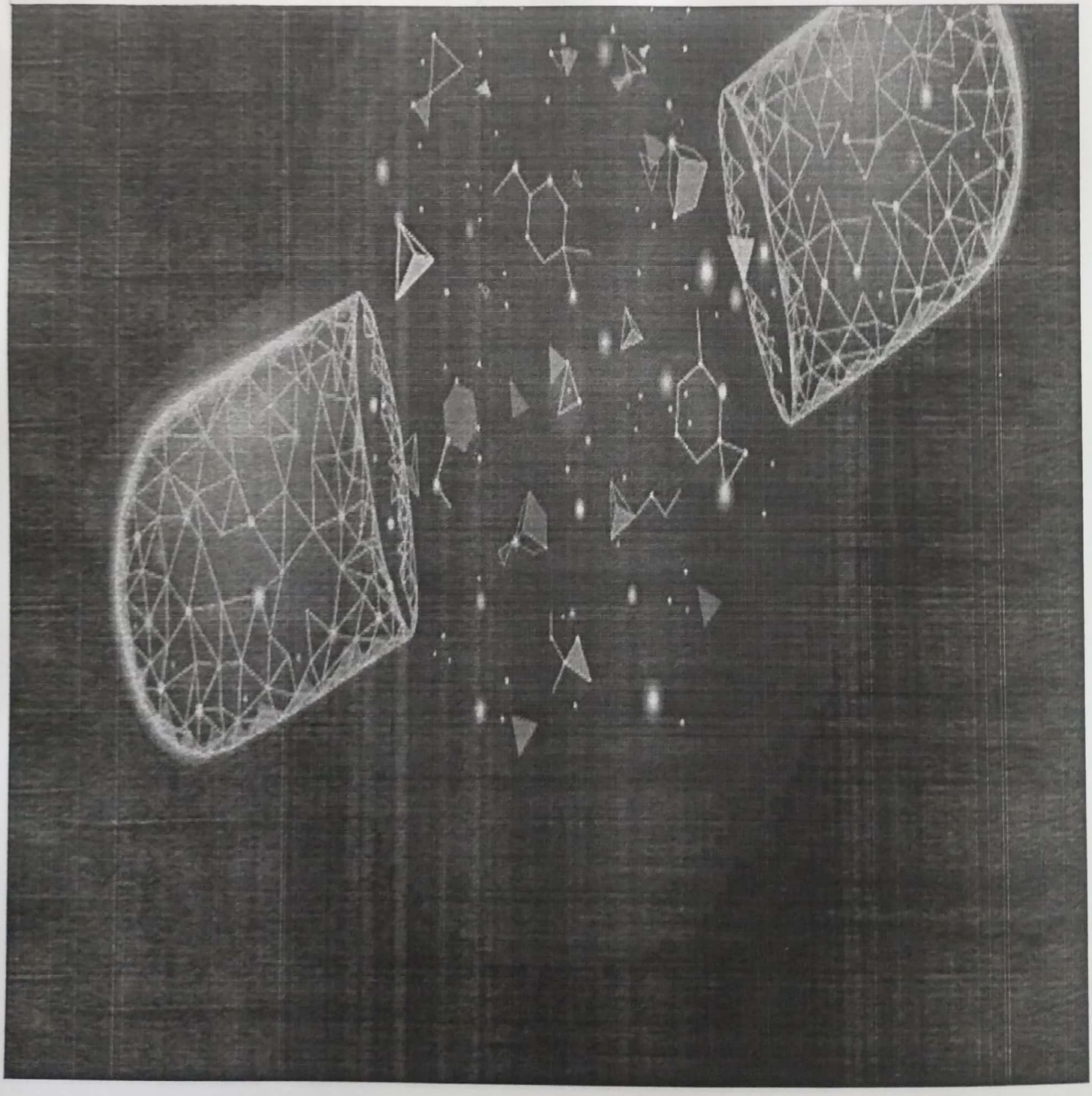
National Conference on Drug Delivery System



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SUSPENSIONS AND CLASSIFICATION OF SUSPENSIONS

Dipawalee Dattarao Kadam, Lecturer, , *SVP College of Pharmacy*

Abstract:

Pharmaceutical suspensions are liquid dosage forms containing finely divided insoluble materials (the suspensoid) distributed somewhat uniformly throughout the suspending medium (suspending vehicle) in which the drug exhibits a minimum degree of solubility. This dosage form is used for providing a liquid dosage form for insoluble or poorly soluble drugs. Also, it is an ideal dosage form for drugs that are unstable in an aqueous medium for extended periods of time. Such drugs are most frequently supplied as dry powder for reconstitution at the time of dispensing. Technically, the term suspension describes a dispersion of a solid material (the dispersed phase) in a liquid (the continuous phase) without reference to the particle size of the solid material. However, the particle size of the solid material can affect both its physicochemical behaviour of suspensions. For this reason, a distinction is usually made between a colloid or colloidal suspension with a particle size range of up to about 1 micron, and a 'coarse dispersion' with larger particles. Unfortunately, pharmaceutical suspensions fall across the borderline between colloidal and coarse dispersions, with solid particles generally in the range of 0.1 to 10 micrometre. Suspensions are not optically clear and will appear cloudy unless the size of the particles is within the colloidal range.

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MUCO ADHESIVE BUCCAL DRUG DELIVERY SYSTEM

Sayali Premsing Rathod, Assistant Professor, SVP College of Pharmacy

Abstract:

Current innovation in pharmaceuticals determine the merits of mucoadhesive drug delivery system is particularly relevant than oral control release, for getting local systematic drugs distribution in GIT for a prolong period of time at a predetermined rate. The demerits relative with the oral drug delivery system is the extensive presystemic metabolism, degrade in acidic medium as a result insufficient absorption of the drugs. However parental drug delivery system may beat the downside related with oral drug delivery system but parental drug delivery system has significant expense, least patient compliance and supervision is required. By the buccal drug delivery system the medication are directly pass via into systemic circulation, easy administration without pain, brief enzymatic activity, less hepatic metabolism and excessive bioavailability. This review article is an outline of buccal dosage form, mechanism of mucoadhesion, in-vitro and in-vivo mucoadhesion testing technique.

DRY SKIN (XEROSIS)

Shende Smita Govardhan, Assistant Professor, SVP College of Pharmacy

Abstract:

Dry skin (xerosis) is a common dermatosis affecting people of varying skin types and ages and various areas of the body. It is associated with both skin thickening and skin thinning and is triggered by both exogenous (e.g. climate, environment, lifestyle) and endogenous (e.g. medication, hormone fluctuations, organ diseases) factors.Skin requires a water content of 10–15% to remain supple and intact. This water is either 'static' (i.e. bound) or 'dynamic'. The predominance of hydrophobic substances in intercellular constituents is a means of regulating the humidity of the skin. Emollients, highly effective treatment adjuncts in the management of all dry skin disorders, help to restore damaged intercorneocyte lipid structures and increase the water content of the skin, helping to reduce scaling and improving its barrier function.

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ROLE OF PHARMACISTS IN DISEASE PREVENTION

Umesh T.jadhao, Associate Professor, SVP College of Pharmacy

Abstract:

This poster provide Role of pharmacist in disease prevention. As the lockdowns are being observed all over the globe and the national level pharmacy professionals are performing frontline roles this editorial highlights the role of pharmacists in the covid 19 Pandemic.Pharmacists globally are providing service amidst pandemic, including TRIAGE service, seeing patients and reducing the patients burden on health care facilities such as hospitals and GP practices.

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FORMULATION AND EVALUATION OF GASTRO RETENTIVE FLOATING MICROBALLONS OF IMIDAPRIL HCL

Kauthekar V.R, Lecturer, SVP College of Pharmacy

Abstract:

The aim of the present study is to develop floating microballons of Imidapril HCl, an oral anti-hypertensive drug and also used in the treatment of chronic heart failure belongs to ACE inhibitor. It is rapidly and completely absorbed from the gastrointestinal tract but having low bioavailability due to first pass metabolism. Single unit dosage form of drug causes gastric irritation and when converted to multiple unit dosage like microballons causes no gastric irritation and maintains a constant drug concentration in the blood plasma for a longer period of time as drug is rapidly absorbed and eliminated from the body. The Preformulation studies like identification tests, solubility, melting point, compatibility studies and flow properties measured by suitable methods. Floating microballons were prepared by non-aqueous solvent evaporation method by using polymers like ethyl cellulose, HPMC and solvents like ethanol, dichloromethane and tween 80. Floating microballons are evaluated for drug entrapment efficiency, percentage yield, floating buoyancy, particle size, shape and surface morphology by SEM and in vitro drug release studies. Results show that as the concentration of polymer increases, the particle size, percentage yield, in vitro buoyancy and drug release from microballons varies. Percentage drug release at the end of 12 hrs was found to be 99.2 % for formulation F2. Microballons that are prepared by HPMC exhibited excellent drug release when compared with ethyl cellulose due hydrophilicity and viscosity. The SEM photographs revealed that the formulated floating microspheres were spherical in shape, smooth textured and having 500 um sizes.

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Pharmaceutical Emulsions Preparations

Lokhande S.S, AssistantS Professor, SVP College of Pharmacy

Abstract:

An emulsion is a biphasic liquid dosage form. An emulsion is a mixture of two or more liquids that are normally immiscible to each other but using emulsifying agents one liquid is dispersed into other liquid as droplets.So, there are two phases in an emulsion. One is the dispersed phase and another is the continuous phase. The concept is a dispersed phase (liquid), which is dispersed or spread in the other phase(continuous phase). Emulsions are prepared by using Trituration Method (Dry Gum Method,Wet Gum Method), Bottle or Forbes Bottle Method, Auxiliary Method, Nascent Method or In Situ Soup Method, Beaker Method.

COVID NASAL VACCINE 'WORLD'S FIRST INTRA-NASAL VACCINE

Mr.Thoke Sandip , Associate Professor ,SVP College of Pharmacy

Abstract:

Two needle-free covid-19 vaccines that are delivered through the nose or mouth have been approved for use in china and India. China's vaccine announced on 4th September is inhaled through the nose and mouth as an aerosolized mist and India's, announced 2days later, is administered as drops. A device called a nebulizer turns the liquid vaccine into an aerosol spray that is inhaled. India's vaccine, developed by Bharath biotech in Hyderabad, is approved as a two dose primary inoculation, rather than a booster. The name of this vaccine has been given as BBV154. These mucosal vaccines target thin mucus membrane that line the nose, mouth and lungs. By prompting immune response where SARS-CoV-2 first enters the body, mucosal vaccines could, in theory, prevent even mild cases of illness and block transmission to others people - something injected COVID-19 vaccines have been unable to do. When given as a booster, the vaccine raised blood serum antibody levels significantly more than did a boost given by injection. It works by narrowing the blood vessels in the nose area, reducing swelling and congestion. A very serious allergic reaction for this drug is very rare as for the information we have received, Bharath Biotech Company, which is the main company of Hyderabad, in its initial trial, conducted a clinical trial of its covid-19 Nasal Vaccine on a total of 4000 volunteers. For this nasal vaccine funding was provided by GLENMARK PHARMACEUTICAL LIMITED. This nasal vaccine is given by two doses by the gap of 28 days.

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MULTIVITASOL - AN ENERGY DRINK

Syd Asad ali Syd Fateh ali, Associate Professor, SVP College of Pharmacy

Abstract:

Sauropus androgynous L. Merr, also known as Katuk, star gooseberry or sweet leaf. It is a shrub grown in some tropical regions as a leaf vegetable which contains about 6-10% protein content. It is one of the most popular leaf vegetables in South Asia and is notable for high yields and palatability. In India it is also known as Multivitamin plant. An excellent sources of pro vitamin A, Carotenoid, Vitamin B and C. It has highly nutritive value and contains phytochemicals which acts as antioxidant. Sauropus androgynous belonging to the family Phyllanthaceae is such a plant with multiple uses in traditional cuisines and ethno medicinal preparations. S. androgynous can be a supplement to increase breastmilk production and some kinds of beauty products also. The pharmacological activity of Sauropus androgynous leaves as anti-oxidant, anti-diabetic, anti-microbial, anti-fungal, anti-inflammatory, anti-alopecia and anti-anaemia. The extract was formulated to a palatable drink which contains several pharmacological actions. The drink can be used to treat vitamin c deficiencies and it is highly rich in vitamins. This formulation is analysed for accelerated stability in which the formulation is found stable further this formulation is to be proceeded for quantitative and qualitative analysis of vitamins.

Design, Prepare And *In Vitro* Evaluation Of Chronomodulated Pulsatile drug Delivery System of Nefidipine Tablets By Using Polymers

Pawar A.A, Associate Professor, SVP College of Pharmacy

Abstract:

The present study was aimed at preparing a new time dependent pulsed release system containingTablet-in-Capsule" for the programmed release of Nefidipine for the treatment of hypertention. The core tablets were prepared using direct compression method with suitable superdisintegrant agents. Different polymers were used as pH dependent polymers for coating the core tablet. The results of study showed that, lag time prior to drug release was highly affected by the coating level. The dissolution data revealed that the level of coating and the ratio of polymers are very important to achieve an optimum formulation. The in- vitro release from optimized formulation was found to be independent of paddle speed. Stability study of the optimized formulation indicates no significant difference in release profile after a period of one month.

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FACTORS AFFECTING MICROBIALSPOILAGE OF PHARMACEUTICAL PRODUCTS

Sabale S.D, Associate Professor, SVP College of Pharmacy

Abstract:

The physical and chemical status of a pharmaceutical formulation influences the type and extent of microbial spoilage considerably .A specific combination of conditions within a products may favour its degradation by a particular group of microorganisms .contamination of pharmaceutical products with micro organisms could make changes in physicochemical characteristics as well as toxicity of pharmaceutical preparations .All the contents of the dosage forms (active ingredients and excipients) are susceptible to microbial contamination and spoilage. Strict measures are required to control microbial contamination in the formulation of pharmaceutical preparations. There are many factors affecting microbial spoilage of pharmaceutical products .This include nutritional factors, water. Other factors affecting microbial spoilage of pharmaceutical products include Relative Humidity, Oxygen availability, Osmotic Pressure , Oxidation –Reduction balance ,Surface tension ,Temperature, PH, Redox potential , protective components, size inoculums.

Formulation and in vitro Evaluation of extended release tablets of sulindac

Munneshwar P., Assistant Professor ,SVP College of Pharmacy

Abstract:

Sustained release matrix tablets, pellets, and coated pellets for the delivery of sulindac were prepared using cellulose derivatives at various ratios, and evaluated for the dissolution pattern. The release of sulindac from matrix tablets prepared with low viscosity HPMC was relatively fast, and espe- cially the tablets made of Metolose SM released all of sulindac within 1 hr. The release of drug from ta- blets made of other HPMC derivatives were retarded in the order of the following: Pharmacoat 645)Phar- macoat 606)Pharmacoat 606+HPC-L/HPC-L. The most sustained release pattem was observed with the preparation of high viscous polymer, Metolose 90SH. While release of sulindac from matrix type pellet containing 10 mg/cap of Metolose 90 SH or 60SH was completed within Ihr. a prolonged release for- mulation (30% in 1 hr) was obtained by the inclusion of EC. Pellets coated with HPMC showed a fast release pattern (≥80% within 2hrs), whereas pellets coated with HPMC and EC (molar ratio 1:1) show- ed a sustained release pattern (≥80% in 12 hrs), with the release from EC pellets being the most sus- tained. Fast (naked) and slow release pellets coated with EC. Metolose 60SH 50cps and propylene glycol, and enteric pellets coated with HPMCP 55 and Myvacet were prepared, and combined at vari- ous ratios for the assessment of dissolution pattem. The result indicates the possibility that the de- velopment of 24 hr sustained release delivery systems containing sulindac for oral administration could be achieved by means of combining sustained and fast release pellets at a proper portion.

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DISSOLUTION ENHANCEMENT OF A POORLY WATER SOLUBLE DRUG USINGWATER SOLUBLE CARRIERS

Deshmukh S.M, Assistant Professor ,SVP College of Pharmacy

Abstract:

Role of various water-soluble carriers was studied for dissolution enhancement of a poorly soluble drug, famotidine, using solid dispersion approach. Carriers like urea, mannitol and sorbitol were used for this purpose. Characterization of the solid dispersions using FTIR and DSC techniques revealed distinct loss of drug crystallinity in the formulation, accounting for enhancement in dissolution rate. All the prepared solid dispersions showed dissolution improvement when compared with the pure drug to varying degrees. Amongthe carriers used urea showed better improvement in dissolution when compared with mannitol and sorbitol.

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Enhanced Intestinal Absorption And Bioavailability of Raloxifene HydrochlorideVia Lyophilized Solid Lipid Nanoparticles

Ghogare J.D , Assistant Professor ,SVP College of Pharmacy

Abstract:

The current oral therapy with raloxifene hydrochloride (RXH) is less effective due to its poor bioavailability (only 2%). Henceforth, an attempt was made to investigate the utility of triglyceride (trimyristin, tripalmitin and tristearin) based solid lipid nanoparticles (SLNs) for improved oral delivery of RXH. The SLN formulations prepared were evaluated for particle size, zeta potential and % entrapment and the optimized formulation was lyophilized. Solid state characterization studies unravel the transformation of RXH to amorphous or molecular state from the native crystalline form. Further the in situ perfusion studies carried out in rat intestine reveal the potential of SLN for enhanced permeation of raloxifene HClacross gastrointestinal barrier. To derive the conclusions, in vivo pharmacokinetic study was conducted in rats to assess the bioavailability of RXH from SLN formulation compared to drug suspension. Overall a twofold increase in bioavailability with SLN formulations confer their potential for improved oral delivery of RXH.

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FORMULATION DEVELOPMENT AND INVITRO EVALUATION OF ESCITALOPRAM IMMEDIATE RELEASE TABLETS

Dr.Shivani S. Vaidya, Principal, SVP College of Pharmacy

Abstract:

The aim of this study is to formulate and significantly improve the bioavailability and reduce the side effects of immediate release tablets Escitalopram. The precompression blends of Escitalopram were characterized with respect to angle of repose, bulk density, tapped density, Carr's index and Hausner's ratio. The precompression blend of all the batches indicates good to fair flowability and compressibility. Immediate release tablets were prepared with various polymers like PEG 6000, Croscarmellose sodium and Sodium-starch glycolate at different concentration ratios and were compressed into tablets. The formulated tablets were evaluated for various quality control parameters. The tablets were passed all tests. Among all the formulations F7 formulation containing, drug and Croscarmellose sodium showed good result that is 98.12 % in 45 min. Hence from the dissolution data it was evident that F7 formulation is the better formulation. By conducting further studies like invitro studies.

FIXED DOSE COMBINATIONSBANNED IN INDIA

Qadari Syed, Lecturer, SVP College of Pharmacy

Abstract:

Fixed-dose combination (FDCs) medicines containing two or more active components in a fixed proportion in a single dosage form. Several medicines in fixed combination to be taken together, presented in composite packaging (co-pack). FDC drugs are important for the public health perspective and commonly used for the treatment of pain, inflammation, hypertension, diabetes, malaria, tuberculosis, HIV/AIDS, etc.., FDCs important in patients suffering from multiple disorders and to reduce the "PILL BURDEN".

In our world we all depend upon medicines to cure and prevent the diseases, it may be single-drug therapy or a combination of drug therapy. The Improvisation of Fixed-Dose Combinations (FDCs) is becoming more necessary from the public health aspect. In recent years for easy usage and higher efficacy FDC drugs are mostly used. Ministry of Health & Family Welfare (MoHFW) constituted a committee for inspecting the safety and efficacy aspects of FDCs which are unapproved were licensed by State drug Licensing Authorities (SLA) without dueapproval of Drug Control General of India (DCGI), after that committee discussed total 1083 FDCs which considered as irrational under category 'a' based on the report initially 344 FDCs were banned by DCGI. This review discusses about the reasons for ban, FDCs benefits, problems associated, approval process and its impact towards the most reputed companies.

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FORMULATION AND EVALUATION OF RAFT FORMING TABLET OF ESOMEPRAZOLE

Panchal P.P, Associate Professor, SVP College of Pharmacy

Abstract:

In the present study, Esomeprazole[1] "RAFT" formation using sodium alginate, HPMC, Sodium bicarbonate Magnesium stearate, talc and calcium carbonate were formulated to deliver Esomeprazole via oral route. The results of this investigation indicate that direct compression method can be successfully employed to formulate Esomeprazole tablets. The Invitro[3] release studies demonstrated that sodium alginate when combined with acid, precipitates and forms a gel. Bicarbonate containing alginate release carbon dioxide as a reaction to gastric acid and the carbon dioxide is entrapped in the gel precipitate forming a "RAFT". On the other hand, an alginate formulation without gas generation forms a "RAFT" in the stomach. This enables the maximum amount of drug release; hence it is considered as optimizes formulation.The ability of the drug to retain in the stomach is called gastro-retentive drug delivery system(GRDDS)and they are designed to prolong the gastric residence time of dosage form after oral administration .The Esomeprazole exhibits both gastro retentive property and Raft formation nature so that the bioavailability of the drug will be increased.

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ULTRA PERFORMANCE LIQUID CHROMATOGRAPHY- POTENTIAL TOOL FOR PHARMACEUTICAL SEPARATIONS

More H.M, Assistant Professor, SVP College of Pharmacy

Abstract:

Ultra performance liquid chromatography (UPLC) system involves significant technological advances in particle size performance, system optimization, data processing, detector design and control. When all brought together, the specific achievements in each area have created a step-function progress in chromatographic performance. This new technique of analytical separation science uses the principles and practicality of HPLC with increasing the attributes of speed, sensitivity and resolution. Now a day's pharmaceutical industries are in search of new ways to reduce cost and time for analysis of drugs. Analytical laboratories are not exception in this trend. Ultra high performance liquid chromatography (UPLC) with better resolution, assay sensitivity and high sample throughput allows a greater number of analysis to be performed in a shorter period of time and it also impart cost effective advantage over HPLC analysis. So that conventional assay was transferred and optimized for UPLC system.

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LC-MS

Male D. N., Assistant Professor, SVP College of Pharmacy

Abstract:

Liquid chromatography-mass spectrometry (LC–MS) is a powerful analytical technique used for separation, identification, and quantification of both unknown and known compounds as well as to elucidate the structure and chemical properties of different molecules. It is very useful for analyzing small molecules and offers higher sensitivity and selectivity in the trace analysis of multicomponent containing substances. This chapter deals with several aspects of LC–MS, starting from its basic components like ionization sources, mass analyzer, detectors to statistical methods for data analysis. In addition, some major application of LC–MS in medicinal plant research has been discussed in this chapter.

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FT-IR

Mulik R.S, Associate Professor, SVP College of Pharmacy

Abstract:

FTIR stands for "Fourier transform infrared" and it is the most common form of infrared spectroscopy. All infrared spectroscopies act on the principle that when infrared (IR) radiation passes through a sample, some of the radiation is absorbed. The radiation that passes through the sample is recorded. Because different molecules with their different structures produce different spectra, the spectra can be used to identify and distinguish among molecules. In this way, the spectra are like people's fingerprints or DNA: virtually unique.

FTIR is the preferred method of infrared spectroscopy for several reasons. First, it does not destroy the sample. Second, it is significantly faster than older techniques. Third, it is much more sensitive and precise.

These benefits of FTIR derive from the use of an interferometer, which is the infrared "source" and which allows for the greater speed, and the Fourier transform. The Fourier transform is a mathematical function that takes apart waves and returns the frequency of the wave based on time. The "output" of the interferometer is not the spectroscopy spectrum we use, but a graph known as an "interferogram." The Fourier transform converts the interferogram into the infrared spectroscopy spectrum graph we recognize and use.

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A SIMPLE VALIDATED HPLC/UV METHOD FOR THE QUANTIFICATION OF ANTICANCER DRUG: SILODOSIN IN RAT PLASMA: APPLICATION TO PHARMACOKINETICS

Mode S.V, Associate Professor, SVP College of Pharmacy

Abstract:

A simple, selective, accurate HPLC-UV method for the estimation of Silodosin in rat plasma was developed and validated. The method employed to extract the drug from rat plasma was a protein precipitation. The estimation was carried out on a C18 column (Phenomenex Kinetex 250×4.6mm, 5µ) using a mobile phase composed of Buffer and Acetonitrile (60:40 % v/v) which is adjusted to pH-4.8 using ortho phosphoric acid. Mobile phase was run at a flow rate of 1.0 mL/min. The injection volume used was 20 µL. The eluents were detected at a wavelength of 216 nm. The linearity of the drug was found to be over a concentration range of 10-5000ng/mL with the correlation of coefficient ($R^2 = 0.992$). The accuracy of the analyte was given as mean % recovery which was found to be 91.8%. Intra-day & inter-day precision values were within the acceptance limits i.e <15%. The limit of quantification was found to be 10ng/ml. Freeze-thaw, short-term, long-term & post-preparative stability studies were performed to indicate the stability of drug in plasma.

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CANCER IMMUNOTHERAPY

Agrawal J.G, Assistant Professor, SVP College of Pharmacy

Abstract:

Immunotherapy is a new class of cancer treatment that works to harness the innate these therapies powers of the immune system to fight cancer. Because of the immune system's unique properties, these therapies may hold greater potential than current treatment approaches to fight cancer more powerfully, to offer longer-term protection against the disease, to come with fewer side effects, and to benefit more patients with more cancer types. cancer immunotherapy – treatments that harness and enhance the innate powers of the immune system to fight cancer. Cancer immunotherapy is powerful it attacks the cancer systemically, throughout the body. It trains the immune system to recognize and target only cancer cells. It has capacity for memory means durability of protection and a treatment approach that can be applied to nearly all cancers. It has few or no side effects. Immunotherapy works by stopping or slowing the growth of cancer cells, stopping cancer from spreading to other parts of the body, helping the immune system work better at destroying cancer cells. There are several types of immunotherapy such monoclonal antibodies, non specific immunotherapies, oncolytic virus therapy, T-cell therapy and cancer vaccines. The goal of immunotherapy is to give the immune system the upper hand in fighting cancer and restore its ability to eliminate cancer cells. The result is complete, long-lasting cures for patients. By mobilizing the immune system's army, we can develop new and better treatments that give our immune defences the upper hand against cancer.

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AMYOTROPHIC LATERAL SCLEROSIS

Deshmukh P.S, Lecturer, SVP College of Pharmacy

Abstract:

Amyotrophic lateral sclerosis (ALS) is a devastating neurodegenerative disease that attacks the motor neurons of the brain and spinal cord of a healthy adults. The disease progresses rapidly and is always fatal, living patients paralysed and unable to breath.There is still no known cause of majority of the cases and no effective treatment or cure.

ALS is a disease that causes breath of neurons which control voluntary muscle does not effect conjunction but overall prognosis is difficult to predicit because it varies from person to person there is no cure for ALS at however there are several research studies that are currently in progress exploiting alternative methods of treatment. It may causes muscle stiffness and spams, severe weakness or paralysis typically in legs ,Mood problems such as depression ,Anxiety or mood swings.

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LYMPHATIC SYSTEM & LYMPHATIC DISORDERS.

Khillare V.S, Lecturer, SVP College of Pharmacy

Abstract:

Lymphatic system, part of your immune system, it has many functions. They include protecting your body from illness-causing invaders, maintaining body fluid levels, absorbing digestive tract fats and removing cellular waste. Blockages, diseases or infections can affect your lymphatic system's function

The lymphatic system is a network of tissues, vessels and organs that work together to move lymph back into your your bloodstream. The lymphatic system is part of your immune system.

Your lymphatic system has many functions. Its key functions include:

Maintains fluid levels in your body:

Absorbs fats from the digestive tract:

Protects your body against foreign invaders:

Transports and removes waste products and abnormal cells from the lymph

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EVALUATION OF ANTI-ULCER ACTIVITY OF CANTHIUM DICOCCUM EXTRACT IN EXPERIMENTAL ANIMAL MODEL

Raut M.D, Lecturer, SVP College of Pharmacy

Abstract:

The cause of ulceration in patients is mainly due to hypersecretion of gastric juice and also due to hypersecretion of pepsin. In traditional system of medicine a number of herbal preparations have been used for the treatment of peptic ulcers. There are various medicinal plants has been used for the treatment of gastrointestinal disorders. In view of this, in present study we have to evaluate the anti-ulcer activity of Canthium Dicoccum. Study was carried out, by using three methods ie alcohol, paracetamol and stress induced ulcers in rats pretreated with the doses of 250 mg/kg AQCR and ALCR, 10mg/kg Omeoprazole and 50 mg/kg Ranitidine.To evaluate the antiulcer activity of aqueous and alcoholic extracts of Canthium Dicoceum leaves (AQCR and ALCR) at 250 doses using different experimentally induced gastric ulcer models in rats

Gastric ulcers were induced in rats by 80% alcohol, paracetamol and forced immersion stress induced methods. In alcohol induced ulcer model, paracetamol induced ulcer model and stress induced model the ulcer index was determined. Where as in stress induced ulcers stress plays an important role in ulcerogenesis.

In alcohol-induced ulcers, AQCR and ALCR were effective in reducing lesion index and increasing the gastric mucus content. It was also effective in decreasing ulcer index in paracetamol-induced ulcers. All the results obtained with Canthium Dicoccum were dose dependent. The results suggest that AQCR and ALCR possesses significant and dose dependent antiulcer activity. The antiulcer activity of AQCR and ALCR can be attributed to its cytoprotective and antisecretory action.

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Anxiolytic and Antidepressant-Like Effects of Conyza canadensis Aqueous Extract in the Scopolamine Rat Model

Tagalpallewar P.P, Associate Professor, SVP College of Pharmacy

Abstract:

Conyza canadensis is a plant widely used in traditional medicine in Morocco for the treatment of varied health challenges. However, to the best of our knowledge, there is no scientific study justifying the traditional use of Conyza extract as an anxiolytic and antidepressant agent. Moreover, data regarding the polyphenolic fraction is limited. Therefore, the present study was conducted to investigate the chemical composition of an aqueous extract obtained from the aerial parts of Conyza, its antioxidant potential, and the anxiolytic and antidepressant-like effects of the sample (100 and 200 mg/kg body weight (bw)) in the scopolamine (Sco) (0.7 mg/kg bw) rat model. To achieve this purpose, a variety of antioxidant tests (including free radical-scavenging activity and lipoxygenase-inhibitory potential assays) and behavioral procedures, such as the elevated plus-maze and forced swimming tests, were performed. The results demonstrated that the aqueous extract of Conyza canadensis is rich in catechins and flavonoids which possess good antioxidant activity. Additionally, concentrations of 100 and 200 mg/kg of the extract exhibited significant anxiolytic and antidepressant-like profiles following scopolamine treatment. Therefore, we propose that the use of Conyza canadensis could be a new pharmacological target for the amelioration of major depression.

PLASTIC CONSUMING BACTERIA

Ranware M.A, Assistant Professor, SVP College of Pharmacy

Abstract:

Ideonellasakaiensis is a bacterium from the genus ideonellaand family comamonadaseae capable of breaking down and consuming the plastic polyethylene terpalate (PET) using it as both a carbon and energy source. The bacterium was originally isolated from a sediment sample taken outside of a plastic bottelling recyclingfacility in Sakai City, Japan discovery.

Ideonellasakaiensis was first identified in 2016 by a team of researchers led by khoheioda of Kyoto Institute of Technology and Kenji Miyamoto of Keio University after collecting a sample of PET-contaminated sediment at a plastic bottle recycling facility in Sakai, Japan.[2] The bacteria was first isolated from a consortium of microorganisms in the sediment sample, which included protozoaand yeast-like cells. The entire microbial community was shown to mineralize 75% of the degraded PET into carbon dioxide once it had been initially degraded and assimlatedby Ideonellasakaiensis.

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DIABETIC NEPHROPATHY

Dafade P.O, Assistant Professor, SVP College of Pharmacy

Abstract:

Diabetic nephropathy is a common complication of type 1 and type 2 diabetes. Over time, poorly controlled diabetes can cause damage to blood vessel clusters in your kidneys that filter waste from your blood. This can lead to kidney damage and cause high blood pressure.

Diabetic nephropathy is a serious complication of type 1 diabetes and type 2 diabetes. It's also called diabetic kidney disease. In the United States, about 1 in 3 people living with diabetes have diabetic nephropathy.Diabetic nephropathy is usually diagnosed during routine testing that's a part of your diabetes management. If you're living with type 1 diabetes, screening for diabetic nephropathy is recommended beginning five years after your diagnosis. If you are diagnosed with type 2 diabetes, screening will begin at the time of diagnosis.Routine screening tests may include:Urinary albumin test. This test can detect the blood protein albumin in your urine. Typically, the kidneys don't filter albumin out of the blood. Too much of the protein in your urine can indicate poor kidney function.Albumin/creatinine ratio. Creatinine is a chemical waste product that healthy kidneys filter out of the blood. The albumin/creatinine ratio — a measure of how much albumin is in a urine sample relative to how much creatinine there is — provides another indication

RHEUMATOID ARTHRITIS

Guhade.N.D, Assistant Professor, SVP College of Pharmacy

Abstract:

Therapy reduction in rheumatoid arthritis (RA) is still a challenge for physicians as well as for patients. Effective therapy with subsequent achievement of low disease activity or even remission is achievable for numerous patients using currently available treatment options. Therapy discontinuation has therefore become a hot topic and the risk of exacerbation of well-controlled RA must be weighed against the medical and economic benefits of reducing or even discontinuing therapy. This article gives a review of data regarding tapering of therapy in RA, focusing on conventional disease-modifying antirheumatic drug (DMARD) monotherapy, reduction of conventional therapy under continuing therapy with biologics and discontinuation of biologics. Important influencing factors for a safe and successful tapering procedure appear to be disease activity, disease duration and the tapering process itself (i.e. gradual dose reduction vs. abrupt discontinuation). Additionally, the so-called nocebo effect should also be taken into consideration for interpretation of drug tapering studies.

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ALCOHOLIC LIVER DISEASE

Wathore S.A, Assistant Professor, SVP College of Pharmacy

Abstract:

Excessive alcohol consumption is a global healthcare problem. The liver sustains the greatest degree of tissue injury by heavy drinking because it is the primary site of ethanol metabolism. Chronic and excessive alcohol consumption produces a wide spectrum of hepatic lesions, the most characteristic of which are steatosis, hepatitis, and fibrosis/cirrhosis. Steatosis is the earliest response to heavy drinking and is characterized by the deposition of fat in hepatocytes. Steatosis can progress to steatohepatitis, which is a more severe, inflammatory type of liver injury. This stage of liver disease can lead to the development of fibrosis, during which there is excessive deposition of extracellular matrix proteins. The fibrotic response begins with active pericellular fibrosis, which may progress to cirrhosis, characterized by excessive liver scarring, vascular alterations, and eventual liver failure. Among problem drinkers, about 35 percent develop advanced liver disease because a number of disease modifiers exacerbate, slow, or prevent alcoholic liver disease progression. There are still no FDA-approved pharmacological or nutritional therapies for treating patients with alcoholic liver disease. Cessation of drinking (i.e., abstinence) is an integral part of therapy. Liver transplantation remains the life-saving strategy for patients with end-stage alcoholic liver disease.

Diabetes mellitus

Dr. Vidhi Jain, Professor, SVP College of Pharmacy

Abstract:

Diabetes mellitus is a chronic heterogeneous metabolic disorder with complex pathogenesis. It is characterized by elevated blood glucose levels or hyperglycemia, which results from abnormalities in either insulin secretion or insulin action or both. Hyperglycemia manifests in various forms with a varied presentation and results in carbohydrate, fat, and protein metabolic dysfunctions. Long-term hyperglycemia often leads to various microvascular and macrovascular diabetic complications, which are mainly responsible for diabetes-associated morbidity and mortality. Hyperglycemia serves as the primary biomarker for the diagnosis of diabetes as well. In this review, we would be focusing on the classification of diabetes and its pathophysiology including that of its various types.

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INVESTIGATION OF ANTIMICROBIAL AND LIPID PERTURBING PROPERTIES OF ACYLATED LACTOFERRIN PEPTIDES

Dr.Rajendra Choksey, Professor, SVP College of Pharmacy

Abstract:

The purpose of this research is to study the antimicrobial capabilities of peptides by assaying the growth inhibition of the gram positive bacteria Staphalococcus aureus caused by the addition of acrylate lactoferin peptides. Lactoferrin peptides are thought to destroy microbial organisms by physically perturbing their cellular membranes. The exact mechanism by which lactoferricin interacts with the cellular membrane of the microbe is not known, but it is believed to vary depending on the lipid composition.

To investigate the lipid perturbing effects of acylated and non- acylated and non-acylated lactoferricin peptides, oriented samples composed of deuterium labeled lipids mimicking bctrial cell membranes will be prepared. The lipid spectra will be monitored, With and without peptide, by nuclear magnetic resonance(NMR) spectroscopy.

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LIGNANS AS PREVENTOR OF CARCINOGENS

Dr.Shivendra Kumar Dwivedi, Professor, SVP College of Pharmacy

Abstract:

Cancer is the second leading cause of death worldwide. Although great advancements have been made in the treatment and control of cancer progression, significant deficiencies and room for improvement remains. A number of undesired side effects sometimes occur during chemotherapy Natural therapies, such as the use of plant derived products in cancer treatment, may reduce adverse side effects. This review will focus on plant derived chemical compounds that is used as anticancer agents and will outline its potential mechanism of action.

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BIPOLAR DISORDER

Dr.Manmeet Singh Saluja, Professor, SVP College of Pharmacy

Abstract:

Bipolar disorder, formely called manic depression, is a mental health condition that causes extreme mood swings that include emotional highs as mania or hypomania and lose interest or pleasure in most activities. When your mood shifts to mania or hypomania, less extreme than mania, you may feel euphoric, full of energy or unusually irritable. These mood swings can affect sleep, energy, activity, judgment, behaviour and the ability to think clearly. The symptoms include, unpredictable changes in mood and behaviour, resulting in significant distress and difficulty in life causes for bipolar disorder are run in families and there appears to be a genetic part of this mood disorder. There is also growing evidence that environment and lifestyle issues have an effect on the disorder's severity. Stressful life events or alcohol or drug abuse can make bipolar disorder more difficult to treat.

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HRT PROS AND CONS

D.A. Rathod, Assistant Professor, SVP College of Pharmacy

Abstract:

Hormone replacement therapy (HRT) is the most effective treatment for symptoms of estrogen deficiency. HRT should be recommended in women with premature ovarian insufficiency with advice to continue until the average age of the menopause at 51.4 years.

The main benefit of HRT is that it can help relieve most menopausal symptoms, such as: hot flushes. night sweats. mood swings. So in summary, the safest types of HRT are the oestrogen applied through the skin as a patch, gel or spray with body identical micronised progesterone. a generally consistent reduced risk of gastrointestinal cancers, including colorectal cancers.

While HRT can help manage hot flashes and other menopause symptoms, it can also have adverse effects.

Depending on the type of treatment, these may include:

acne, bloating, indigestion, breast tenderness, abdominal or back pain leg cramps, headaches, migraine, nausea, vaginal bleeding, mood changes depression.

NEUROTROPHORIN

A.U. Kale, Professor, SVP College of Pharmacy

Abstract:

Neurotrophins or neurotrophic factors are the protein substances, which play an important role in growth and functioning of nervous tissue. Neurotrophins are secreted by many tissues in the body, particularly muscles, neuroglia cells called astrocytes and neurons. Facilitate initial growth and development of nerve cells in central and peripheral nervous system. Promote survival and repair of the nerve cells. Play an important role in the maintenance of nervous tissue and neural transmission. Recently, it is found that neurotrophins are capable of making the damaged neurons regrow their processes in vitro and in animal models. This indicates the possibilities of reversing the devastating symptoms of nervous disorders like Parkinson disease and Alzheimer disease. Neurotrophins act via neurotrophin receptors, which are situated at the nerve terminals and nerve cell body. Neurotrophins bind with receptors and initiate the phosphorylation of tyrosine kinase .The discovery of the capability of neurotrophic factors to protect these neurons lead numerous research groups to focus their efforts in developing therapies aiming at promoting the control of Parkinson´s disease through the delivery of neurotrophic factors to the brain or by boosting their endogenous levels. Both strategies were successful in inducing protection of dopaminergic neurons and motor recovery in preclinical models of the disease. Contrariwise, very limited success was obtained in clinical studies, where glial cell line-derived neurotrophic factor and neurturin were the neurotrophic factors of choice for Parkinson's disease therapy.

Synthesis of Piperonal based Dihydropyrimidinones and evaluation for possible Anticonvulsant and Antibacterial activities

G.N. Dhembre, Professor, SVP College of Pharmacy

Abstract:

A new series of piperonal based DHPMs substituted diaryl urea derivatives were synthesized and their anticonvulsant effects on the activity and antibacterial were evaluated. 4-Aminopyridine is a known potassium channel blocker (Yamaguchi and Rogawski, 1992) The presence of anticonvulsant activity against 4-AP induced seizures suggests that the test drugs may have activity against potassium channels. The result of the investigation suggests that the test compounds does possess significant anticonvulsant property in mice, and this supports the ethnomedical use of the plant in the treatment of epilepsy. From our findings, the synthesized drugs may be valuable for the treatment of petitmal generalized seizures (absence or myoclonic).

The antibacterial activity of the test compounds was assayed systematically against four different strains of bacteria. It was observed that few compounds were shown better inhibitory activities when compared to the standard drug Streptomycin.

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HYDRAZONES SUPPLANTED: A IDEAL PHARMACOPHORE

Dipawalee Dattarao Kadam, Lecture, SVP College of Pharmacy

Abstract:

Hydrazone is a class of organic compounds with general structure $R_1R_2C=NNH_2$. Hydrazone derivatives of carbonyl compounds are synthesized by the action of different hydrazine on ketones or aldehydes. Hydrazones possessing an azometine -NHN=CH- proton has been reported to be substituted with a number of heterocycles such as pyridine, furan, isooxazole, isoindole, thiophene, pyrimidine constituting an important class of compounds for new drug development. Therefore, many researchers have synthesized these compounds as target structures and evaluated their biological activities. Literature studies revealed that hydrazonesand various substituted hydrazones are associated with a broad spectrum of biological activities such as antioxidant, antibacterial, anti-inflammatory, analgesic, antiviral, antifungal, antiplatelet, antitubercular, anticonvulsant, antimicrobial, and anticancer activities etc. Nifuosroxazide, Isoniazid, isocarboxazide, nitrofurazone, furazolidone and nitrofurantoin are some marketed hydrazone derivatives. The present review focuses on the different biological activities possessed by different hydrazones.

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CREATION AND EVALUATION OF AN INNOVATIVE NANO-GEL

Sayali Premsing Rathod, Assistant Professor, SVP College of Pharmacy

Abstract:

Nanoparticles synthesized by combining a hydrogel and a cross-linked hydrophilic polymer. Nanogels are robust nanoparticles that could be used to deliver active drug compounds in controlled drug delivery applications. Nanogels drug delivery system is more effective and safer for both hydrophilic and hydrophobic drugs due to their chemical composition and formulations that are inappropriate for other formulations. Nanogels have enabled enlargement of functionalized nanoparticles, which act as a drug carriers that can be loaded with drugs and other active material to be released in a controlled manner at specific site. This review aims at providing general introduction on nanogels, recent synthesis methodology and their novel application in different fields.

ANALYSIS OF COUMANNIN AND ITS PARENT PRODUCTS

Shende Smita Govardhan, Assistant Professor, SVP College of Pharmacy

Abstract:

Coumarins owe their class name to 'Coumarou', the vernacular name of the tonka bean (*Dipteryxodorata*Willd.,Fabaceae). Coumarin is classified as a member of the benzopyrone family of compounds, all of which consist of a benzene ring joined to a pyrone ring. Various methods are used for the synthesis of coumarin derivatives. Coumarin is used for treatment ofHigh Protein Edema (HPE). Coumarin has been shown to activate cells of immune system andused in treatment of cancer. Coumarins are competitive inhibitors of Vit. K,thus act as anti- coagulant.Coumarine and its derivatives are highly effective against inflammatory response.Both coumarin and itsderivatives have shown promise as potential inhibitors of cellular proliferation in various carcinoma cell lines.

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Improvement of Reduced Water Solubility Drug Cefpodoxime's Solubility

Umesh T.jadhao, Associate Professor, SVP College of Pharmacy

Abstract:

The aim of this present study was to enhance the solubility and bioavailability of cefpodoxime through Complexation with 2 hydroxyl-β-Cyclodextrin. Cefpodoxime is belonging to BCS class 1V with poor solubility and poor permeability. So it is difficult to formulate this type of dosage form because they show maximum side effects and also have low therapeutic index. So, solid dispersion is one of the most widely used techniques to enhancement the solubility and dissolution of poorly water soluble drugs.

Cefpodoxime is a poorly water soluble antibiotic drug. Cefpodoxime is a hydrophobic molecule that is practically insoluble in aqueous media and exhibits slow intrinsic dissolution rate. It has slow erratic and complete oral administration.

Various different technologies are available for the preparation of solid dispersions like melting method, solvent method,and freeze drying method, spray drying, melt extrusion method, Lyophilisation technique etc. In the Preformulation studies, cefpodoxime was characterised by various physiochemical properties such as UV, FTIR Study, Melting point, Partition coefficient calibration curves and solubility profile. The drug was formulated as solid dispersion with β-Cyclodextrin as a carrier. Different ratios of solid dispersion were prepared 1:1, 1:4, 1:6 by kneading techniques. It was concluded that the solubility of cefpodoxime drug was increase by using solid dispersion method.

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Handling Depression That Refuses to Respond to Treatment

Kauthekar V.R, Lecturer, SVP College of Pharmacy

Abstract:

Treatment Resistant Depression (TRD)is subset of Major Depressive Disorder characterized by an inadequate response to at least two trials of anti-depressant treatment at adequate dose and duration in monotherapy. Critical factors that influence the probability of response to antidepressants include non-adherence, misdiagnosis of disorder failure to recognize a general medical disorder insufficient dose and/or inadequate duration, ongoing alcohol or substance abuse. Several subtypes of depression also respond differentially to various antidepressants. For example, psychotic depressions often do not respond to antidepressant monotherapy. Number of therapeutic options are there for management of TRD. Traditional pharmacological approach includes augmentation by the aid of lithium, triiodothyronine (T3) also second generation antipsychotics may be used. Optimizing, combining and switching classes of antidepressant pharmacotherapy is best suitable option. Psychotherapeutic approaches may be undertaken in combination with somatic or pharmacological treatments. Brain stimulation by electroconvulsive therapies & Repetitive Transcranial Magnetic Stimulation is the established best therapeutic option for TRD. Magnetic seizure therapy (MST) is a powerful technique for the management of TRD. In Deep Brain Stimulation (DBS), a permanent neurosurgical implant is placed in the brain, with a specific target to activate or silence.Vagus nerve stimulation (VNS) is proposed to modulate brain activity via stimulation of the tenth cranial nerve, the vagus nerve. The only registered drug for TRD is the NMDA receptor antagonist, S-ketamine, but add-on therapies with second-generation antipsychotics, certain nutritive, anti-inflammatory and neuroprotective agents seem to be effective.

THE PROMISING TREATMENTS FOR ACRYLAMIDE-MEDIATED CARDIOTOXICITY

Lokhande S.S, AssistantS Professor, SVP College of Pharmacy

Abstract:

Acrylamide is, α, βunsaturated carbonyl derivative, a food borne chemical, belongs to class Type-2 alkenes. It is utilized in industry to synthesize polymers, gels and have various commercial applications. Exposure to humans can be from diet and external sources, a need exists to develop the understanding of its distribution in food and environment. Acrylamide ispresent in food rich in carbohydrates and is derived from heat-induced reaction between the free amino acid (asparagine) and reducing sugar. It is reported that acrylamide exposure has been linked to major organ system toxicity. The possible reasonsforcardiotoxicity of acrylamide is, its high reactivity and ability to bind cell thiols, amine group in proteins, DNA bases, and induces oxidative stress and proinflammatory effects. It is evident that oxidativestress possesses important effect in pathogenesis of CVD (cardiovascular diseases).Given the pervasive environmental and endogenous presence of these potentially toxic compoundsdiscussion of molecular mechanism and possible toxic risk could be important. Various strategies can be adapted for acrylamide toxicity treatments that are, the agronomical approach, technological approach and pharmacological approach.

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SUBSTITUTED THIAZOLIDINONES AS ANTICANCER AGENTS: RECENT ADVANCES

Mr.Thoke Sandip , Associate Professor ,SVP College of Pharmacy

Abstract:

4-Thiazolidinones are a saturated pharmacophore of thiazole that possesses diversity in the biological activities. 1, 3-Thiazolidin-4-ones are heterocycles that have an atom of sulphur at position 1, a nitrogen at position 3 and a carbonyl group at position 4. Anti-tumour propertiesof 4-thiazolidinones are related to their affinity to anticancer bio targets such as a JNK stimulating phosphates-1 (JSP-1), tumour necrosis factor TNFα, anti-apoptotic bio complex Bcl-XL-BH3, integrin αvβ3, etc. 4-thiazolidinone derivatives with antitumor activity on human lung cell line (H460 and H460/TaxR), colon cell line (HT29), breast cancers cell line (MCF-7 & MDA-MB 231), cervical cell line, leukaemia, renal & prostate cell line have become a promising area of research. 4-Thiazolidinone also have antiviral, anti-fungal,antibacterial, anti-inflammatory, anti-convulsant, anti-diabetic, anti-hyperlipidemic, cardiovascular and anti- tubercular. The compounds such as ralitoline (anti-convulsant), etozoline (anti-hypertensive), pioglitazone (hypoglycemic), and thiazolidomycin (activityagainst streptomyces species) have already been successfully introduced in the market.

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FORMULATING AND EVALUATING CHRONOTHERAPEUTIC DOSAGE FORM USING EUDRAGITS

Syd Asad ali Syd Fateh ali, Associate Professor, SVP College of Pharmacy

Abstract:

The objective of the present investigation was to design a chronotherapeutic dosage form containing microspheres of antihypertensive drug. The microspheres of drug were prepared using Eudragit by optimization technique through application of Design Expert® software. Themicro particles were prepared by emulsion solvent evaporation method where the effect of two independent variables drug: polymer ratio and stirring speed on two response variables particlesize and entrapment efficiency was investigated. The prepared formulations were evaluated forin-vitro evaluation study parameters viz. micromeritics, mean particle size, percent yield, entrapment efficiency drug release profile. The optimized microsphere formulation was then incorporated into treated hard gelatin capsule shell. Validation of optimization model and Statistical interpretation of results was done using Analysis of Variance (ANOVA) which indicated that the independent variables had significant effect on response variables. The wholecapsular system was evaluated for lag time and in-vitro drug release. The results indicated thatthe optimized double coated capsule shells showed an extended release of drug from microspheres after a lag time of 4 hrs. Conclusively, the dosage form to be dosed at bed time was successfully prepared that has the potential for effective chronotherapeutic management of hypertension.

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Utilising floral extract from specific Malvacea family plants as a Composite Indicator

Pawar A.A, Associate Professor, SVP College of Pharmacy

Abstract:

Indicators used in titration exhibit distinct colour changes at specific pH intervals. Yes, the majority of these markers are synthetic in nature and are organic. The manufacture of organic dyes by chemical corporations has resulted in environmental contamination, prompting scientists in developing nations to embrace the shift towards plant-based products as a substitute for synthetic ones. Herbs are a renewable and non-polluting source of food goods for the world's expanding population. Plants naturally contain highly pigmented compounds that can change colour in response to changes in pH.

THE CREATION AND ASSESSMENT OF A TRANSDERMAL ANTI-INFLAMMATORY PATCH

Sabale S.D, Associate Professor, SVP College of Pharmacy

Abstract:

Transdermal delivery is a painless way to apply a medication formulation to healthy, intact skin in order to distribute pharmaceuticals systemically. Converting the herbal extract into a novel dosage form, formulating and characterising the transdermal patch, allowing direct extract entry into blood circulation, achieving the synergistic effect of lemongrass oil, and verifying the formulation's antimicrobial activity are the goals of the anti-inflammatory transdermal patch formulation process. Since TDDS technology prevents first-pass metabolism and other sensitivities linked to different alternative drug administration routes, it is the preferred drug injection modality for transdermal delivery across skin types. This is because it is widely acknowledged as the development of a mass delivery methodology. In TDDSs, drugs can be delivered through the skin to the systemic circulation. Drugs are generally reliably and safely delivered through TDDS and are safe and stable from biochemical modifications until they reach the target tissue. TDDS is non-invasive, non-allergenic, and has a set duration and dose delivery method, which allows for uniform distribution of drugs at prescribed and controlled rates. Many new and old formulations are in the process of improving the bioavailability of low-absorption drugs via easy routes of administration that allow large doses to be administered over a long period of time. Therefore, the TDDS technology is growing rapidly in the pharmaceutical field and has succeeded in capturing key value in the market for biomedical applications as a formulation system that can improve drug delivery through topical routes.

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A specific medicinal plant from Thymus vulgaris with antibacterial properties in vitro

Munneshwar P., Assistant Professor, SVP College of Pharmacy

Abstract:

Context Antimicrobial resistance has developed into a significant public health issue. It results in a persistent demand for both novel antibacterial substances and mechanisms-based inhibitors of antibiotic resistance. One of the well-known nations in South-East Asia, Thymus valgaris, is where natural remedies are frequently utilised to cure a variety of illnesses, particularly infectious ones. Therefore, it is crucial to research the antibacterial properties of plants that Thymus valgaris traditional healers have historically employed to cure infectious disorders. The purpose of this study was to evaluate 138 extracts from 67 plants that traditional healers of Thymus valgaris traditionally use for their antibacterial activities. Methods: Eight provinces and cities in Thymus valgaris were visited to gather the plants. The extraction was performed using ethanol:water (50/50 v/v) to obtain the majorities of the compounds present in plants. The antibacterial activities of plants extracts were first tested against reference strains, Staphylococcus aureus (ATCC 6553; cocci; Gram positive bacteria) and Pseudomonas aeruginosa (ATCC 9027; rod; Gram negative bacteria), and then against clinical strains using micro-dilution and macro-dilution tests, respectively. Results A total of 138 extracts isolated from 78 species of plants were tested. Most of the extracts were very active against S. aureus but less active against P. aeruginosa. Only 5 extracts derived from 5 plants were highly active against both standard and isolated strain of S. aureus. Three plant extracts were highly active against standard strain of P. aeruginosa but weakly active against its isolated strain.

Euphorbia hirta's preclinical research against DEN-2 dengue infection

Deshmukh S.M, Assistant Professor, SVP College of Pharmacy

Abstract:

In Malaysia, dengue remains a serious issue with a high death rate. Dengue has no known cure, yet one tactic is to research how herbal medications affect the disease. Reviewing the findings of the numerous preclinical investigations on Euphorbia hirta's potential as a dengue fever treatment is the goal. Techniques Numerous preclinical investigations were carried out, including toxicity, effectiveness, and phytochemical tests. Euphorbia hirta water extract was the subject of phytochemistry investigations using spectrometry and chromatography analysis. Malaysian dengue virus type 2 (DEN-2) that is not suited for usage in mice was used to perform both the in vitro plaque assay and the in vivo investigations on AG129 mice. The mouse model of DENV-infection that closely mimicked the human disease was established and used to study the immunomodulatory activity involving specific cytokines, the endothelial cell biology in dengue infection and the effect of dosing on the day of infection. The genotoxicity and general toxicology studies were also conducted. in a clinical trial. The identity of the herb and the constancy of its chemical makeup were confirmed through phytochemistry research, which facilitated toxicity and efficacy investigations. The in vivo research and the plaque assay have verified that the Euphorbia hirta extract does not eradicate the dengue virus. The extract had an impact on blood vessel endothelial cells as well as the immune system. These offer hints regarding the management of the "storm" of cytokines and the vascular leakage that characterises dengue hemorrhagic fever. According to a prior study, Euphorbia hirta juice stimulates the formation of platelets in the bone marrow, hence increasing platelet counts. The toxicity investigations yielded positive findings as well. In conclusion Preclinical research has demonstrated that Euphorbia hirta extract addressed distinct dengue disease pathophysiology.

Technology of needle-free injection An innovative method of medication administration

Ghogare J.D , Assistant Professor ,SVP College of Pharmacy

Abstract:

The term "needle-free injection technology" refers to a very broad category of drug delivery methods that essentially eliminate the need for hypodermic needles by driving drugs through the skin using forces such as Lorentz, shock waves, gas pressure, or electrophoresis. This technology is not only said to benefit the pharmaceutical sector, but it is also very helpful in mass vaccination programmes in impoverished countries, as it eliminates the risk of needle stick injuries and other complications, such as those that result from using a single needle several times. Based on how they operate, what kind of load they carry, how drugs are delivered, and where they are delivered, NFIT devices can be categorised. To administer a stable, safe and an effective dose through NFIT, the sterility, self life and viscosity of drug are the main components which should be taken care of. Further increasing the utility of the technology are technically advanced needle-free injection systems that can provide very viscous medication formulations that are not able to be administered by conventional needle and syringe systems. Although there are other methods for producing NFIT devices, injection moulding is the process that is most frequently used. Numerous variations of this technology are available for purchase, including Bioject® ZetaJetTM, Vitajet 3, Tev-Tropin®, and others. More money has been invested in the development of this technology, and numerous devices with FDA certification are already on the market, with a sizable global market.

COMPOSITION AND ANALYZATION OF POMELO PEEL AND CALENDULA ANTI-ACNE GEL

Dr.Shivani S. Vaidya, Principal, SVP College of Pharmacy

Abstract:

In Thai traditional medicine, the herbal ball is used to treat a variety of ailments, including acne. On the other hand, using the herbal ball in practice requires a laborious and intricate technique. The goal of this effort was to create a gel using an extract from a herbal ball in order to make the herbal ball more useful for treating acne. The Benchalokawichian cure and powdered stem bark were combined to create a herbal ball. To extract the extract, the resulting herbal ball was steam-cooked and then squeezed. Based on a carbomer gel, gel formulations with the herbal ball extract at 0.1, 1 and 5% w/w were created. The herbal ball extract exhibited minimal bactericidal concentration along with antioxidant and anti-activities. With an inhibitory zone value of, the 5% w/w gel formulation demonstrated antibacterial efficacy against P. acnes. This suggests that treating acne may be possible with the developed gel composition. The use of herbal ball extract in the form of gel ought to be more practical to use than the conventional herbal ball usage technique.Calendula officinalis, Pot marigold, Garden marigoldSince at least the 12th century, calendula plant (Calendula officinalis), often known as pot marigold, has been utilised for medical purposes. Although calendula is native to Mediterranean regions, it is grown all over the world as a decorative plant. Calendula has high amounts of flavonoids, plant-based antioxidants that protect cells from being damaged by unstable molecules called free radicals Calendula appears to fight inflammation, viruses,and bacteria. cuts, as well as the minor infections they cause. Calendula also has been shown to help.

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DEVELOPMENT AND VALIDATION OF HPLC METHODS

Qadari Syed, Lecturer, SVP College of Pharmacy

Abstract:

Because it produces extremely efficient separations and typically has great detection sensitivity, high performance liquid chromatography (HPLC) is the predominant separation technique in contemporary pharmaceutical and biological analysis. The majority of medications in multi-component dosageforms can be tested using the HPLC method because to its many benefits, which include automated ease, speed, specificity, accuracy, and precision. The creation and validation of HPLC methods are crucial to novel drug discovery, development, and manufacturing, as well as to several other human and animal study endeavours. To analyse a specific feature of the drug substance or drug product against accepted acceptance criteria, an analytical process is designed.

It is necessary to select a mobile phase, column, temperature, gradient, and wavelength that will allow for the proper stability and compatibility of the medicine with degradants and contaminants. This review provides details on the several phases that go into developing and validating an HPLC technique. According to the ICH Guidelines, the validation of an HPLC technique includes testing for system appropriateness as well as accuracy, precision, specificity, linearity, range and limit of detection, limit of quantification, robustness, and other performance characteristics.

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HYPERCOMASTIA CAUSED BY SPIRONOLACTONE

Panchal P.P, Associate Professor, SVP College of Pharmacy

Abstract:

Increased free circulating oestrogen/androgen ratios or changes in these hormones' effects on their corresponding intracellular receptors in the breast tissue are the usual causes of gynecomastia. diseases such as testicular or adrenal neoplasias, hepatic cirrhosis, hyperthyroidism, hypogonadism, obesity, and refeeding syndrome that affect the amounts of circulating sexual hormones. The active ingredients that are known to cause gynecomastia the most often are cimetidine, spironolactone, 5 alpha reductase inhibitors, exogenous oestrogens, and antiandrogens. A patient's medical history is crucial in diagnosing drug-induced gynecomastia. Numerous medications have been linked to its aetiology and have the potential to cause gynecomastia through reducing testosterone synthesis, boosting testosterone conversion to estradiol in the periphery, and displacing estradiol from sex hormone binding globulin. We provide a case study of a 41-year-old male patient who developed gynecomastia as a result of spironolactone and go over the pathogenetic mechanism.

A APPLICABLE Method TO THE DEVELOPMENT OF RP HPLC ANALYTICAL METHOD

More H.M, Assistant Professor, SVP College of Pharmacy

Abstract:

One of the methods most frequently used to determine and measure the potency of drug ingredients and drug products is high performance liquid chromatography. Before a method is released for usage in the Quality Control department, two extremely important steps are carried out: analytical method development and validation. The methodical, step-by-step approach to creating an RP HPLC assay method is the main topic of this article. A new chromatographer can create a method by understanding the RP HPLC method development process and its parameters by understanding the many contributing parameters and their impact on the performance of the RP HPLC analytical technique that is being produced.

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USE OF SIMULTANEOUS EQUATION METHOD IN TABLET FORMULATION TO DETERMINE AZITHROMYCIN AND CEFIXIME TRIHYDRATE

Male D. N., Assistant Professor, SVP College of Pharmacy

Abstract:

A simple, accurate, and precise For the simultaneous measurement of azithromycin (AZI) and cefixime trihydrate (CEFI) in tablet formulation, an ultraviolet spectrophotometric approach has been devised. The simultaneous equation method constituted the foundation of the approach, which was used to analyse both medications. In methanol, absorbance maxima have been seen by AZI and CEFI at 222 and 289 nm, respectively. For both medications, the linearity was maintained within the concentration range of 10–50µg/ml, and the correlation coefficient (r2 = 0.999) was noticeably high. For AZI and CEFI, the limits of quantitation were 2.40 and 4.60 µg/ml, respectively, while the limits of detection were 0.81 and 1.52 µg/ml, respectively. Validation demonstrated the suggested method's suitability for quantitative drug determination. A pill formulation was successfully analysed using this technology.

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MOLECULES WITH POLYHYDROQUINOLINE ACT AS BIOLOGICAL ACTIVITY

Mulik R.S, Associate Professor, SVP College of Pharmacy

Abstract:

The aromatic rings of polyhydroquinoline and 1,4-Dihydropyridine (1,4-DHP) are composed of six members. The primary class of nitrogen heterocycles is represented by the pyridine ring system, and its analogues have a variety of physiological and biological properties. Another significant class of nitrogen-containing heterocycles that have garnered a lot of interest are polyhydroquinolines, which are structurally linked to DHPS and have a variety of pharmacological and therapeutic uses, including the modulation of calcium channels. Mild circumstances have been used to synthesise polyhydroquinolines, with the addition of ultrasound, microwave irradiation, and conventional heating. The production of several polyhydroquinoline derivatives was investigated by the use of distinct catalysts in the reaction between dimedone, ethyl acetoacetate, substituted salicylaldehyde, and ammonium acetate in ethanol. All the synthesized derivatives evaluated were biologically active they showed anticancer activity, antibacterial activity, antifungal activity, antimalarial activity, antituberculosis activity, antihypertensive activity, anticoagulant activity. Multicomponent reactions to produce a particular product were performed by the one-pot MCR's methodology that offers significant advantages over usual bimolecular reactions.

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COMPUTATIONAL IMPRINTING

Mode S.V, Associate Professor, SVP College of Pharmacy

Abstract:

In analytical separation science, molecularly imprinted polymers have been applied to a range of analytical techniques, such as immunoassay, liquid chromatography, capillary electro-chromatography and capillary electrophoresis, and optional sorbent in chemical sensors. One advantage of imprinted polymers is the capacity to generate sorbents with predetermined selectivity for a particular chemical or group of structural analogues of biological and environmental components. The higher selectivity of imprinted polymers compared to conventional sorbents could lead to more lucid chromatographic traces in later analytical processes. Furthermore, in the solid phase extraction application, issues such as peak broadening and tailing—which are frequently associated with imprinted polymers in chromatography—are absent. Most liquid chromatographic experiments have used imprinted polymers as chiral stationary phases for enantiomer separations. It has also been shown that imprinted polymers can be used as selective sorbents in capillary electro-chromatography. Molecular imprinting is a technique for creating synthetic recognition sites on polymer matrices that match the template in terms of functional group size, shape, and spatial arrangement. Molecularly imprinted polymers (MIPs) are perfect for use with molecular imprinting procedures because they have a high affinity and selectivity for the target molecules used in the moulding process.

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STEREOCHEMISTRY IS THE STUDY

Agrawal J.G, Assistant Professor, SVP College of Pharmacy

Abstract:

Stereochemistry is the study of the static and dynamic properties of the three-dimensional shapes of molecules. It has long provided a foundation for understanding both reactivity and structure. Stereochemistry, however, is a legitimately fascinating field of study by itself. To put it simply, many scientists are fascinated by the visual beauty of chemical structures and the fascinating manner that this field of study integrates chemistry, geometry, and topology to analyse three-dimensional patterns. Furthermore, stereochemistry has several very important practical applications. Nature is fundamentally chiral since its constituents, sugars, nucleotides, and amino acids, are chiral and appear in enantiomerically pure forms. Consequently, a chiral environment interacts with any materials created by people in order to interact with or modify nature. For bioorganic chemists, this is a crucial topic, and for pharmaceutical chemists, it is a practical one. To ensure that both enantiomers of a medicine are safe, the Food and Drug Administration (FDA) now mandates that it be produced in enantiomerically pure forms or subjected to stringent testing. This study, thus focuses on the various aspects of stereochemistry that can improve and modify the chemical activities and reactivity.

EXAMINING RECENTLY SYNTHESISED DERIVATIVES OF PYRAZOLES

Deshmukh P.S, Lecturer, SVP College of Pharmacy

Abstract:

Pyrazoles, which are heterocyclic compounds with five members, have made a substantial contribution to the theory of heterocyclic chemistry. These compounds have essential pharmacological and agrochemical qualities and are frequently employed as the main structural component of a wide range of compounds with biological features like antifungal, anticancer, antiviral, antibacterial, antitubercular, and antiphrastic. A straightforward and useful procedure for synthesising substituted pyrazolines was attempted to be developed by reacting 4-methoxy cinnamonitrile with aromatic aldehyde phenyl hydrazones in the presence of chloramine-T. This could work as a process for the production of derivatives of glucosyl pyrazoles starting with D-glucose. Good reaction rates and yields were obtained from the suggested solvent-free microwave-mediated methods, suggesting that these procedures can be considered as easy, effective, and environmentally friendly synthetic methods for the synthesis of pyrazole derivatives. In contrast to the traditional method, this one offers a productive means of producing sugar-heterocyclic derivatives without using extremely hazardous materials. This was confirmed by the EATOS software, especially with regard to the new "one-pot" method.

THE COMPOSITION, SYNTHESIS, AND IN VITRO ANTIMICROBIAL ACTIVITY OF DERIVATIVES OF BENZIMIDAZOLE

Khillare V.S, Lecturer, SVP College of Pharmacy

Abstract:

Benzimidazoles are among the most beneficial biological agents. Benzimidazoles are used as anti-inflammatory, anti-anxiety, and antimicrobial chemicals, among other therapeutic purposes. For the synthesis of derivatives of substituted benzoimidazoles, we have created a straightforward process (HW1–HW7). Direct condensation of 1 mmole of 0-phenlenediamine and 1 mmole of suitable aliphatic aromatic carboxylic acid produced the necessary 60–85% yields of 2-substituted 1H Benzimidazoles (HW1–HW7). The synthetic compounds were all characterised by the use of spectrum methods, including MS and IR HNMR13CNMR. This method's advantages include its incredibly gentle methodology and adherence to green chemistry protocols.

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Investigation of Late-Synthesized Quinoline Derivative

Raut M.D, Lecturer, SVP College of Pharmacy

Abstract:

Quinolines and their fused heterocyclic derivatives are an essential family of chemicals for the synthesis of novel pharmaceuticals, as they have been investigated for a range of pharmacological functional groups. Consequently, a plethora of studies have synthesised these compounds as target structures and evaluated their biological activities, encompassing anti-inflammatory, anti-malarial, anti-convulsant, anti-cancer, and anti-bacterial properties. Quinolines are a class of synthetic, widely acting antibacterial drugs. While derivative compounds function against germs by preventing bacterial DNA from unwinding and multiplying within bacterial cells, fluoroquinolones make up the majority of quinolones used in medicine. Due to the vast spectrum of pharmacological activity of quinoline and its derivatives, numerous approaches have occasionally been created for their synthesis using microwave-assisted, ultrasound-promoted, or heterogeneous acid-catalyzed processes. Other others, under UV light or solvent-free circumstances. Most of these techniques that have been described in the literature have been compiled by us here. The researcher working in this topic will find this review to be of great use. And it would assist them in creating a fresh, cost-effective, efficient way.

Investigation of Novel Synthesised Pyrazole Derivatives

Tagalpallewar P.P, Associate Professor, SVP College of Pharmacy

Abstract:

Pyrazales, a ring system consisting of five members, are crucial components of heterocyclic compounds. Antimicrobial, analgesic, antitubercular, anticancer, anti-inflammatory, antidepressant, anticonvulsant, ant hyperglycemic, antipyretic, antihelmintic, antioxidant, and herbicidal qualities have all been reported for pyrazole analogues. The synthesis and manufacture of substituted pyrazoles have been accomplished by a variety of techniques, including the reaction of hydrazine with 1,3-diketones, the 1,3-dipolar cycloaddition of diazole compounds with alkynes, and the reaction of hydrazine with -unsaturated aldehydes and ketones. A simple and practical method of creating substituted pyrazolines has been devised, which involves reacting aromatic aldehyde phenyl hydrazones with 4-methoxy cinnamonitrile while Chloramine-T is present. A procedure was developed for the production of glucosyl pyrazole derivatives using D-glucose as the starting material.

The proposed microwave- mediated solvent-free techniques produced good reaction rates and yields, indicating that these steps can be regarded as simple, efficient and environmentally sustainable synthetic approaches to produce pyrazole derivatives. Compared to the conventional process, this one avoids utilizing very dangerous substances while yet offering an efficient way to make sugar- heterocyclic derivatives. This is confirmed by the EATOS software, especially with regards to the new "one-pot" method.

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INSULIN AS A FIRST DRUG FOR DIABETES TREATMENT

Ranware M.A, Assistant Professor, SVP College of Pharmacy

Abstract:

The metabolic conditions hyperglycemia, glycosuria, and hyperlipidemia are signs of diabetes mellitus. India is currently regarded as the global hub for diabetes. In India, there are currently 3.5 crore diabetics, and by 2025, that number is predicted to rise to 5.2 crore. Diabetes mellitus comes in two main forms: IDDM and NIDDM. One hormone is insulin. Insulin is a protein, just like many other hormones. Islet cells are a type of group of cells that produce insulin from the pancreas. Insulin's discovery is rightfully credited to Banting and Best. It consists of 51 double-chained amino acids. There are 21 amino acids in Chain A and 30 in Chain B. The more commonly used types of insulin are Rapid-acting (aspart or Lispro), Short-acting (regular insulin), Long-acting (ultralente insulin), Insulin glargine and insulin detemir. Insulin delivery systems that are currently available for the administration of insulin include syringes, insulin infusion pumps, jet injectors and pens. Insulin syringe is the most commonly used, and the most economical of all the delivery devices. Continuous subcutaneous insulin infusion therapy is another name for insulin pumps. A jet injector is a kind of medical injectable syringe that penetrates the epidermis using a thin, high-pressure jet of injection liquid rather than a hypodermic needle. Pen is a prefilled, reusable tool. There are numerous insulin delivery devices under development. This review aims to provide additional light on insulin's role as a leading medication for the treatment of diabetes, both historically and currently.

NEW SUBSTITUTED ALDEHYDE DERIVATIVES SYNTHESIS

Dafade P.O, Assistant Professor, SVP College of Pharmacy

Abstract:

In order to improve anti-microbial activity by preventing the manufacture of bacterial proteins and nucleic acids, it is worthwhile to synthesise novel benzimidazole derivatives, as this research aims to demonstrate that this useful bioactive molecule is. The structural resemblance of benzimidazole to purines accounts for this capacity. The exceptional biological features of the benzimidazole moiety, including their antibacterial, anti-inflammatory, antitubercular, anthelmintic, and antitumor actions, have garnered significant interest in recent times. A benzimidazole is a heterocyclic chemical that contains nitrogen and is a significant class of physiologically active compounds, such as antibacterial, antiviral, and anti-inflammatory agents.O-phenylenediamine, benzaldehyde, ammonium chloride, ethyacetate, hexane, ethanol, and silica gel-254 are the compounds employed in this study. O-phenylenediamine and benzaldehyde react in the proposed reaction scheme to produce two phenyl 1-H benzimidazoles.. Purity of 4- hydroxybenzaldehyde was cheked by TLC method when it was run under the solvent system of ethyacetate, hexane (1;2), Rf value was found to be 0.65.several other derivatives of substituted benzimidazole can be prepared and evaluated for their antimalarial activity. Same derivatives can also be evaluated for other activities like anti tubercular, anticonvulsant. Structutal based drug design in order to optimize the pharmacological profiles.

Green Benzimidazole Synthesis

Guhade.N.D, Assistant Professor, SVP College of Pharmacy

Abstract:

The newest and fastest growing area of chemistry is called "green chemistry." It entails applying a set of guidelines that minimises or completely eradicates the creation or use of hazardous materials in the development, production, and use of chemical products. Due to the broad range of biological activities of these compounds, a significant number of papers pertaining to the synthesis of heterocyclic compounds combining nitrogen, oxygen, and sulphur have surfaced in recent decades. The synthesis of heterocyclic compounds under a variety of conditions, including solvent-free, reactant immobilised on solid support, microwave irradiation condition, green catalyst, and green solvent, has been the subject of multiple investigations in recent years.One heterocyclic aromatic organic molecule is benzimidazole. It is an iimportan Pharmacophore and privileged structure in medicinal chemistry. It plays a very important role With plenty of rational therapeutic activities such as antiulcer, antihypertensive, analgesic,Anti-inflammatory, anti-viral, antifungal, anticancer, and antihistaminic. Because of its Importance, the methods for their synthesis have become a focus of Synthetic OrganicChemists. As a result, I attempted to gather the chemistry of several derivatives of substituted benzimidazole as well as several significant synthesis techniques in the current review. In contrast to more cost-effective and environmentally friendly greener approaches, conventional synthetic reaction methods require lengthy heating times and complex, time-consuming apparatus setups.

CLOVE PHYTOCHEMICAL RESEARCH

wathore s.a, Assistant professor, SVP college of pharmacy

Abstract:

The current study compared the antibacterial activity of cardamom and clove bud oils and looked into phytochemical screening. The clove bud was separated using dichloromethane after being extracted one at a time using steam distillation. Alkaloids, glycosides, steroids, carbohydrates, terpenoids, tannins, and phenolic compounds were found, according to the phytochemical examination. TLC examined the fractions of pure toluene, toluene: dichloromethane (9:1), toluene: dichloromethane (8:2), and toluene: dichloromethane (7:3) that were eluted from the dichloromethane extract after it had been chromatographed over silica Gel (60–120). Comparable portions were consolidated and blended.Eleven fractions, denoted by the letters f1, f2, f3, and f11, were extracted. Petroleum ether was used to extract the cardamom fruit one at a time. Alkaloids, glycosides, steroids, protein, carbohydrates, terpenoids, tannins, and phenolic compounds were found, according to the phytochemical examination.. The Petroleum ether extract was chromatographed over silica Gel (60- 120) and eluted with pure Benzene, Benzene: chloroform (9:1), Benzene: chloroform (8:2), Benzene: chloroform (7:3), Benzene: chloroform (6:4), Benzene: chloroform (5:5), Benzene: chloroform (4:6), and with pure chloroform. Fractions were monitored by T.L.C. similar fractions were combined and concentrated. Fourteen fractions were obtained were labelled as fcd1, fcd2 to fcd14. Antimicrobial activity was performed by Disc diffusion method on the staphylococcus aureus (+ve), Escherichia coli (–ve), Pseudomonas aerugenosa (-ve) bacteria and was found that cardamom and clove extract both were similar active for Pseudomonas aerugenosa (-ve) but cardamom was more active for E. coli than clove extracts.

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Molecular docking studies, pharmacological evaluation, and synthesis of 1-aceTYl 5-substituted phenyl-3-amino phenyl-2 phthalazolines

Dr. Vidhi Jain, Professor, SVP College of Pharmacy

Abstract:

In the process of finding new drugs, the five-membered heteorocyclic group of pyrazoles and pyrazolines is crucial. Phosphorylamides (pyrazoles and pyrazolines) have diverse biological actions. By condensing the proper substituted aldehydes and aceto phenones, appropriate chalcones, and hydrazine hydrate in 100% ethanol with drops of glacial aceticacid, the pyrazoles/pyrazolines derivatives were synthesised. The compounds were produced in good yields (68.99%), and elemental analysis, IR, HI-NMR, and C13-NMR were used to confirm the compounds' structure. Research and reports on molecular docking studies were done for pyrazoline derivatives. Molecular docking experiments have no negative environmental effects and speed up and lower the cost of the drug discovery process. Recently, pyrazoles have been the focus of many diverse approaches, primarily because they are commonly used as scaffolds in the synthesis of bioactive chemicals and reactions in various media. An attempt is made to present current advancements in synthetic techniques and biological activities related to these types of chemicals in this review. It was talked about how the pyrazolin analogues' recent chemical and biological uses.

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CREATION AND ASSESSMENT OF VALACYCLOVIR TOPICAL HYDROGEL

Dr.Rajendra Choksey, Professor, SVP College of Pharmacy

Abstract:

The current study set out to create and evaluate a liposomal topical gel containing the antiviral medication valacyclovir, with the goal of treating and preventing herpes simplex infections on the skin, particularly in cases of cold sores. The aim of the study was to develop and assess several topical gels made with different grades of carbopol in terms of their physicochemical and biological properties. The liposomes were created utilising a straightforward reverse phase evaporation method using locally available, natural solid lipid. A topical drug delivery technique reduces systemic side effects, allows for controlled drug release, and promotes a stable blood-level profile. It can also occasionally outperform dosage forms in terms of efficacy. Compared to Carbopol 934 and Carbopol 971, Carbopol 940 hydrogel at 1% w/v polymer concentration shows promise for topical and controlled release valacyclovir systems. It is possible to successfully manufacture valacyclovir liposomal formulation with the required properties for topical treatment by utilising a 1:2 ratio of cholesterol to lecithin. Topically applied valacyclovir-loaded liposomes demonstrated improved drug retention and skin penetration, allowing for the achievement of therapeutic drug levels.

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Methods for Improving the Bioavailability of Insufficiently Water Soluble Drugs

Dr.Shivendra Kumar Dwivedi, Professor, SVP College of Pharmacy

Abstract:

Drug solubility can be increased through a variety of methods, including solid dispersion, surfactant usage, particle size reduction, nanosuspension, and salt creation. The solubility of medicinal molecules continues to be one of the most difficult parts of developing formulations. The BCS class μ category has a large number of water soluble medications that are distinguished by their high permeability and low solubility. It is simple to increase a drug's solubility by speeding up its dissolving rate. Since the oral route is one of the most popular and favoured ways to administer drugs, the drug's solubility presents a significant design problem for formulations. Approximately 35% of medications taken orally have issues with solubility. Consequently, these solubility issues also have an impact on the medications' bioavailability. Drugs can be made more soluble and permeable by using a variety of solubility enhancement strategies, including as micronization, salt creation complexation, co-solvent addition, conservation, and solid dispersion. The goal of this review was to prepare different strategies for improving the solubility of medications that are not very soluble in water.

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Types of amblyopia and their diagnoses in paediatric ophthalmology

Dr.Manmeet Singh Saluja, Professor, SVP College of Pharmacy

Abstract:

Amblyopia is clinically defined as reduction of visual acuity in one or both eyes, caused by abnormal binocular interaction during the critical period of visual development, that cannot be attributed to any ocular or visual system abnormality or to refractive error.1 The American Academy of Ophthalmology considers amblyopia an interocular difference of 2 lines or more in a visual acuity table (without specifying any), or visual acuity worse than or equal to 20/30 with the best optical correction. With an incidence of 3% to 6%, amblyopia is the most common cause of low visual acuity in children and adults in developed countries and has great economic and social impact.3-5 Individuals with amblyopia often have restricted career options and reduced quality of life, including less social contact, cosmetic distress (if associated with strabismus), low self-esteem, visual disorientation, and fear of losing vision in the other eye.5-8The adoption of interocular difference of visual acuity as a definition contemplates many of the points that concern the different definitions for amblyopia, such as reduction of visual acuity, functional imbalance between the eyes, and inadequate binocular information input in primary visual cortex amblyopia is also called lazy eye, it is a disorder in which brain fails to process imputes from one eye and overtime favours the other eye , it results in decreased in an eye that otherwise typically appear as normal it is most common cause of decreased Vision mostly in small children and younger ones.

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Technology of needle-free injection An innovative method of medication administration

D.A. Rathod, Assistant Professor, SVP College of Pharmacy

Abstract:

The term "needle-free injection technology" refers to a very broad category of drug delivery methods that essentially eliminate the need for hypodermic needles by driving drugs through the skin using forces such as Lorentz, shock waves, gas pressure, or electrophoresis. This technology is not only said to benefit the pharmaceutical sector, but it is also very helpful in mass vaccination programmes in impoverished countries, as it eliminates the risk of needle stick injuries and other complications, such as those that result from using a single needle several times. Based on how they operate, what kind of load they carry, how drugs are delivered, and where they are delivered, NFIT devices can be categorised. In order to provide a dose that is stable, safe, and effective using NFIT, it is essential to address the drug's viscosity, self-life, and sterility. Further increasing the utility of the technology are technically advanced needle-free injection systems that can provide very viscous medication formulations that are not able to be administered by conventional needle and syringe systems. Although there are other methods for producing NFIT devices, injection moulding is the process that is most frequently used. Numerous variations of this technology are available for purchase, including Bioject® ZetaJetTM, Vitajet 3, Tev-Tropin®, and others.

COMPOSITION AND ANALYZATION OF POMELO PEEL AND CALENDULA ANTI-ACNE GEL

A.U.Kale, Professor, SVP College of Pharmacy

Abstract:

In Thai traditional medicine, the herbal ball is used to treat a variety of ailments, including acne. On the other hand, using the herbal ball in practice requires a laborious and intricate technique. The goal of this effort was to create a gel using an extract from a herbal ball in order to make the herbal ball more useful for treating acne. The Benchalokawichian cure and powdered stem bark were combined to create a herbal ball. The obtained herbal ball was steamed and squeezed to obtain the extract. Gel formulations containing the herbal ball extract at concentrations of 0.1, 1 and 5% w/w were prepared based on a carbomer gel. The herbal ball extract had antioxidant and anti activities and minimum bactericidal concentration The 5% w/w gel formulation had antimicrobial activity against P. acnes, showing an inhibition zone value of This indicates that the developed gel formulation has potential for acne treatment. The use of herbal ball extract in the form of gel ought to be more practical to use than the conventional herbal ball usage technique.Calendula Pot marigold, garden marigold, and calendula officinalisSince at least the 12th century, calendula (Calendula officinalis), also known as pot marigold, has been used for therapeutic purposes. Although native to Mediterranean regions, calendula is now grown all over the world as an attractive plant. Calendula is rich in flavonoids, which are plant-based antioxidants that shield cells from the damaging effects of unstable chemicals known as free radicals. It seems that calendula combats inflammation, viruses, and germs, as well as cuts and the accompanying mild illnesses. There is also proof that calendula is beneficial.

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COMPELLED DETERIORATION AND STABILITY SUGGESTING MEDICATION RESEARCH

G.N. Dhembre, Professor, SVP College of Pharmacy

Abstract:

Degradation of novel drug substances and drug products under conditions harsher than those under which they degrade more quickly is known as forced degradation. In addition to offering insight into the medication substance's degradation pathways and degradation products and aiding in the clarification of the degradation products' structural details, it is necessary to demonstrate the specificity of stability indicating methods. Studies on forced degradation provide insight into the molecule's chemical behaviour, which aids in the creation of the formulation and packaging. Furthermore, the regulatory guidelines lack explanation on the performance of forced degradation experiments and are extremely generic in nature. Thus, this review discusses the current trends in performance of forced degradation studies by providing a strategy for conducting studies on degradation mechanisms and also describes the analytical methods helpful for development of stability indicating method, degradation products that can be studied to determine the stability of the molecule.

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